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Predictors of return to work in employees sick-listed with mental health problems: findings from a longitudinal study

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Background: Sickness absence due to mental health problems (MHPs) is increasing in several European countries. However, little is known about return to work (RTW) for employees with MHPs. This prospective study aimed to identify predictors for RTW in employees sick-listed with MHPs. **Methods:** Employees were recruited when applying for sickness benefit due to MHPs from the Municipality of Copenhagen ($n = 644$). Information about age, gender, occupation, self-reported RTW expectancy, self-reported reason for absence and prior absence with MHPs was retrieved from application forms for sickness benefit. Each participant was followed-up in the National Register for Social Transfer Payments for a maximum period of 52 weeks to estimate time to RTW. Hazard ratios for RTW with 95% confidence intervals were calculated using Cox proportional regression analyses. **Results:** Employees sick-listed with self-reported stress/burnout returned to work faster than those with self-reported depression (HR = 0.76), and other MHPs (HR = 0.56). A positive RTW expectancy of the sick-listed person (HR = 1.27) and no prior absence with MHPs (HR = 1.29) were associated with a shorter time to RTW. **Conclusion:** Sickness absence due to self-reported stress/burnout, a positive RTW expectancy and no prior absence with MHPs predicted a shorter time to RTW among Danish employees sick listed with MHPs. Findings could help social insurance officers and other rehabilitation professionals to identify groups at high risk for prolonged absence.

Keywords: common mental disorders, depression, mental health problems, prediction, return to work, sickness absence

Introduction

Mental health problems (MHPs), such as stress, anxiety and depression are common in the USA and Europe. Epidemiological studies have estimated a 12-month prevalence of major depression between 8% and 10% and prevalences of anxiety disorders between 12% and 22%.[1,2] Furthermore, MHPs are strongly associated with long-term sickness absence and disability pensioning.[3–6] In recent years both sickness absence and disability pensioning due to MHPs have increased in several countries[7–10] and in Denmark, MHPs are currently one of the leading causes for being granted a disability pension (52%).[8] In the last decade Danish policy makers have increasingly expanded the municipalities' responsibility for the return to work (RTW) process and social insurance officers have been appointed a key role for monitoring and evaluating sickness benefit recipients. To effectively target RTW efforts to employees at high risk for prolonged absence, social insurance officers and other rehabilitation professionals need knowledge about predictors for RTW.

In 2001 the World Health Organisation launched the International Classification of Functioning, Disability and Health (ICF) with the aim of providing a unified and standardized language for the description of health and health-related states.[11] The ICF-model consists of six domains: the health condition, body functions and structures, activity, participation, environmental factors and individual factors, under which, RTW belongs to the participation domain.[12] The ICF-model builds on a biopsychosocial perspective proposing that RTW is not solely determined by health, but is the result of a complex relationship between the disabled person and his or her environment.[11] That is, the disabled worker's chance to RTW is not only predicted by improvement in health, but is also related to individual characteristics (e.g. gender, age and RTW expectancy) and to environmental factors (e.g. work environment). Empirical evidence support the multifactorial character of RTW,[13] but to date research on predictors for RTW in employees sick-listed with MHPs is scarce[14] as most studies have investigated RTW for employees with musculoskeletal problems and only used MHPs as a contributing factor.[14] Only recently have studies from the Netherlands,[15–18] Sweden,[19] the UK[20] and Norway[21] looked into factors associated with RTW among people with MHPs. In these studies, older age and the diagnosis depression were associated with prolonged absence, whereas findings have been mixed for gender, prior absence spells, RTW expectancy and occupation.[14,16,17,19,20] Moreover, these findings may not

be transferable to Denmark due to differences in social legislation and management of RTW. Therefore, this paper aims to identify predictors of RTW for Danish employees sick-listed with MHPs.

Methods

Study design and participants

This study is part of a prospective follow-up study on COmmon mental disorders, Return to work and Sickness Absence (CORSA). We recruited participants from the Job Centre Copenhagen, a sub-unit of the municipality, and used information from sickness benefit application forms (SBA forms) to recruit eligible participants and collect data on predictors. In Denmark, all sickness benefit recipients are requested to fill out the SBA forms. The sickness benefits are paid from the municipalities to the employers after 3 weeks of sickness absence for a maximum of 52 consecutive weeks, but this period might be extended, e.g. if the sick-listed person applies for disability benefits. Also, the municipality might pay benefits from the first day of absence, if the employee is registered with a chronic disease or employed in a small private company, which obtained a special state-run insurance policy.[22,23]

From June 2007 to December 2007, social insurance officers at the Job Centre collected all SBA forms on which the employee stated, that MHP was fully or partly the reason for absence ($N = 855$), including employees who also reported somatic complaints ($N = 60$). As the reason for absence was self-reported, this selection was based on a lay perspective on MHPs—as opposed to a medical. Next, we excluded persons if their sickness absence period exceeded 12 weeks, if they were not employed, and not residing in Denmark when sick-listed resulting in a cohort of 721 employees. Details of the design and recruitment procedures have been described elsewhere.[24] Furthermore, we excluded six employees with a missing social number and 71 employees whose information on the SBA form did not match the information from the National Register for Social Transfer Payments (DREAM), yielding a final study sample of 644 participants. Data on gender, age and reasons for absence was complete for all participants, whereas some participants had missing values on RTW expectancy ($N = 94$), prior absence with MHPs ($N = 47$) and occupation ($N = 72$). Consequently, analyses with these variables are based on a reduced study sample (see the tables in the 'Result section' for details).

Finally, all SBA forms were linked with the DREAM registry using the respondent's unique social insurance number. DREAM is based on data from the Danish Government and contains weekly updated information on all social transfer payments in Denmark, including granted sickness absence benefits since 1982. A more detailed description of DREAM and its use in scientific studies has been published elsewhere.[25] Participants were followed-up in DREAM from the first day of absence until RTW, censoring or at the end of follow-up, whichever came first. The maximum follow-up time was 52 weeks, as this is the maximum period for standard payments of sickness benefits.

Predictor variables

In this study, we included predictors from the health, individual and environmental domain in accordance with the ICF-model. We extracted data on the following variables from the SBA forms: occupation, RTW expectancy, prior absence with MHPs, age, gender and self-reported reason for absence.

Occupation

Was categorized based on a Danish version of the International Standard Classification of Occupations[26] resulting in nine occupations: (i) Research, art and technical work (e.g. academics, engineers, musicians); (ii) Management (e.g. directors); (iii) Sales (e.g. shop assistants, bankers); (iv) Service (e.g. cleaners, waitresses); (v) Administration (e.g. secretaries); (vi) Manual work (e.g. craftsmen, industrial workers); (vii) Social work (e.g. pedagogues); (viii) Health (e.g. nurses, doctors); and (ix) Education (e.g. teachers). In cases with missing information, we used supplement information from an additional questionnaire distributed to the CORSA participants.

RTW expectancy

Was measured with the questions 'Do you expect to be able to return to your workplace? yes/no'.

Prior absence due to CMD

Was assessed with the question 'Have you been absent due to the same health problem before? yes/no'.

Age

In year 2007 (inclusion) was dichotomized into 19–49 years and 50 years.

Self-reported reason for absence

Was measured with an open-ended question on the SBA form ('What is the reason for your absence'). We thematically categorized answers into one of the following categories (i) stress/burnout, (ii) self-reported depression, (iii) other MHPs (including anxiety, eating disorder and post traumatic stress disorder) and (iv) unspecific MHPs. The latter comprised employees stating that they were absent due to MHPs, work or personal problems without reporting a specific health condition. Some participants provided several reasons. Considering previous findings associating the diagnoses to a longer time to RTW,[15,27] we categorized reason for absence as self-reported depression, regardless of other reasons mentioned.

Time to RTW

We followed-up all participants in the DREAM register for a maximum period of 52 weeks. Time to RTW was measured in weeks starting from the first day of absence until the first week of RTW. At the start of the follow-up all participants had an entry code of sickness absence in the DREAM register. Participants were considered returned to work, when their weekly entry in DREAM became a blank. In some cases, the sickness absence code was succeeded with a code for unemployment benefits during follow-up. This indicates that the participants were no longer on sick leave and would have been able to resume work; however, they could not do so, because they had lost their jobs during the sick leave. These participants were considered to still be 'at risk' for RTW. If the sickness absence code was succeeded with a social transfer payment code other than unemployment (e.g. old-age pension, disability pension, maternity leave benefits or scholarships), the participants were no longer considered under 'at risk' for RTW and were consequently censored. Participants were also censored, if they died or emigrated from Denmark.

Statistical methods

Mean and median duration of time to RTW was calculated by Kaplan–Meier survival curves. To study the effect of the predictor variables, we used Cox proportional hazard model

to estimate hazard ratios and 95% confidence intervals (95% CI). The Cox model assumes that the hazard ratio remains constant over time. We visually inspected the Log minus log graphs to test this assumption and found no indication of such violation. First, we performed univariable analyses for all variables and time to RTW. Next, we performed a multivariable analysis including all variables. The multivariable model was fitted using a backward stepwise regression approach. The elimination of non-significant predictors was based on Wald statistics (with a significance level of ≤ 0.1) and the factor with the highest *P*-value was removed first. Finally, all removed variables were entered individually and statistically significant predictors were reintroduced to the model. A HR < 1 reflects a longer time to RTW and a HR > 1 reflect a shorter time to RTW.

Results

Characteristics of the participants and time to RTW

The characteristics of the participants are presented in table 1. The majority of the participants was female (71%) and employed within social work (20%) or administration (20%). The mean age was 40 years (SD = 10). Almost 25% of the participants did not expect to RTW and 22% reported that they had prior sickness absence due to MHPs. The participants most often reported to be absent due to a stress/burnout condition (51%), followed by self-reported depression (35%), unspecified MHPs (12%) and other MHPs (3%), which comprised anxiety ($n = 17$), eating disorders ($n = 2$) and post-traumatic stress disorders ($n = 3$).

The survival curve is presented in figure 1. Of the 644 participants, 538 (83.5%) returned to work, 82 (12.7%) did not return (because they were still sick-listed or unemployed) and 24 (3.7%) were censored (because they retired or died) within 52 weeks. The median time to RTW, calculated from the first day of registered sickness absence, was 18 weeks ranging from 3 to 52 weeks and a mean time of 22.8 weeks (SD = 0.6). At 10 weeks, 26% had returned to work, at 20 weeks, 56% had returned, at 30 weeks, 73% had returned and at 40 weeks, 81% had returned.

Table 1 Baseline characteristics of participants ($n = 644$) and median time to RTW in weeks

	N (%)	Median time to RTW
Gender		
Men	190 (29.5)	18
Women	454 (70.5)	19
Age (in years)		
19–49	502 (78.0)	19
≥50	142 (22.0)	18
RTW expectancy		
Yes	411 (74.7)	17
No	139 (25.3)	23
Missing	94	
Prior absence with MHP		
Yes	130 (21.8)	23
No	467 (78.2)	17
Missing	47	
Occupation		
Research, art and technical work	69 (12.1)	18
Management	8 (1.4)	17
Administration	115 (20.1)	18
Trade	47 (8.2)	15
Service	69 (12.1)	18
Manual workers	55 (9.6)	19
Health care	67 (11.7)	15
Social work	115 (20.1)	20
Education	27 (4.7)	24
Missing	72	
Self-reported reason for absence		
Stress/burnout	325 (50.5)	17
Depression	223 (34.6)	19
Other MHP	22 (3.4)	27
Unspecific MHP	74 (11.5)	18

Predictors of RTW

Table 2 presents the predictors for time to RTW in the univariable and multivariable analysis. In the univariable analysis, statistically significantly shorter time to RTW was seen for those with a positive RTW expectancy (HR = 1.35; CI: 1.08–1.67) and no prior absence with MHPs (HR = 1.30, CI: 1.04–1.62). Participants sick-listed with self-reported stress/burnout returned faster to work compared to those sick-listed with self-reported depression (HR = 0.73, CI: 0.60–0.88) and with other MHPs (HR = 0.46, CI: 0.27–0.78). In the multivariable model, RTW expectancy and reason for absence but not prior absence with MHPs remained statistically significant. However, when reintroducing each of the removed variables to the model, prior absence with MHPs was statistically significant and was, therefore, included in the fitted model. Thus the fitted model (table 3) consisted of RTW expectancy, prior absence and reason for absence. In this model, a positive RTW expectancy (HR = 1.27, CI: 1.01–1.61) and no prior absence with MHPs (HR = 1.29, CI: 1.01–1.64) were predictive of a shorter time to RTW. Compared with participants who where sick-listed due to self-reported stress/burnout, self-reported depression (HR = 0.76, CI: 0.61–0.94) and other MHPs (HR = 0.56, CI: 0.31–1.00) were predictive of a longer time to RTW.

Discussion

This article investigated predictors of RTW in a cohort of employees sick-listed due to MHPs. We found that a slower RTW was predicted by reporting sick due to self-reported depression and other MHPs compared with self-reported stress/burnout. Our finding is in line with other studies reporting delayed RTW for employees suffering from depression.[15,27] Further, we found that 20% of the participants reported prior absence with MHPs indicating a high reoccurrence rate. Prior absence due to MHPs predicted a longer time to RTW, possibly reflecting greater severity of the health problems. For sickness absence due to all causes there is weak evidence that prior absence is associated with prolonged absence.[28] Similar associations have been found in two studies, but a third study found no association.[15,19,29] Our study also suggests that RTW expectancy predicts RTW in employees with MHPs, which is in line with findings from Nieuwenhuijsen *et al.*[15] and Heijbel *et al.*[30] RTW expectancy is a complex construct, which originated from Banduras Learning Theory.[31] This theory proposes, that individual perceptions and beliefs about external conditions and abilities to perform certain behaviours will affect actual behaviour, for example, RTW.[32] Researchers have argued that RTW expectancy may be related to both the severity of the health problems as well as working conditions[30] and have proposed that interventions should target RTW expectancies to promote their RTW.[15]

We found no effect of older age on RTW. This is in contrast with research on low back pain, which has consistently shown that higher age is associated with prolonged absence from work.[33] However, for sickness absence due to all causes there is only weak evidence that older age is predictive of RTW[28] and studies with employees sick-listed with MHPs have been inconsistent for the effect of age on RTW.[15–17,19,20,30,34,35] Also, we found no effect of gender on RTW. Whereas female gender

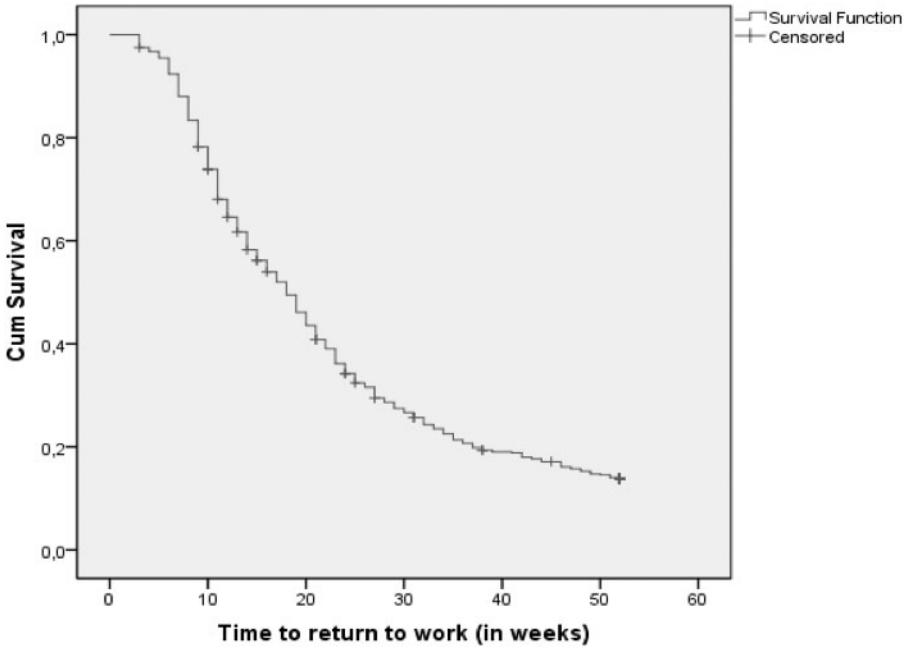

Figure 1 Survival curve for RTW among employees sick-listed with MHP

Table 2 Univariable and multivariable analyses for RTW in employees sick-listed with MHP

	Univariate		Multivariate	
	HR (95% CI)	***P***	**HR (95% CI)**	***P***
Gender				
Men (ref)	1	0.222	1	0.848
Women	0.89 (0.74–1.07)		1.02 (0.80–1.31)	
Age				
19–49 (ref)	1	0.700	1	0.220
≥50	1.04 (0.85–1.27)		1.17 (0.91–1.50)	
RTW expectancy				
No (ref)	1	0.008	1	0.092
Yes	1.35 (1.08–1.67)		1.25 (0.97–1.61)	
Prior absence with MHP				
Yes (ref)	1	0.020	1	0.128
No	1.30 (1.04–1.62)		1.23 (0.94–1.60)	
Self-reported reason for absence				
Stress/burnout (ref)	1	0.000	1	0.023
Depression	0.73 (0.60–0.88)		0.73 (0.58–0.93)	
Other MHP	0.46 (0.27–0.78)		0.53 (0.29–0.99)	
Unspecific MHP	0.73 (0.54–0.97)		0.80 (0.56–1.14)	
Occupation				
Research, art and technical (ref)	1	0.472	1	0.250
Management	0.95 (0.43–2.07)		0.83 (0.35–1.93)	
Administration	0.89 (0.65–1.22)		0.97 (0.68–1.39)	
Trade	0.73 (0.48–1.11)		0.70 (0.43–1.15)	
Service	0.82 (0.57–1.18)		0.96 (0.64–1.45)	
Manual work	0.76 (0.51–1.12)		0.94 (0.60–1.48)	
Health care	1.10 (0.77–1.57)		1.44 (0.94–2.21)	

Cox proportional hazards model. A HR <1 reflects a longer time to RTW and a HR >1 reflects a shorter time to RTW

is associated with prolonged absence in employees sick-listed with low back pain, research so far has produced inconclusive findings regarding gender differences in RTW for employees with MHPs.[15–20,30,34,35] However, gender differences in the prevalence of sickness absence due to MHPs are prominent-women have a considerable higher risk of being sick-listed with MHPs than men.[34–36] Our study population also reflected this difference, as 70% of the participants were women. Hensing *et al.*[36] have reported that whereas women have a higher incidence of sickness absence with MHPs, men have a higher risk for marginalization from the labour market when sick-listed with MHPs. In relation to the ongoing debate of possible gender and age differences in RTW, it should be noted, that studies of RTW differ in their definitions of RTW and their study populations.[15–17,19,20,30,34–36]

Only few studies have investigated differences in RTW patterns for different occupations. In line with a Swedish study on sickness absence due to stress-related conditions,[19] we did not find an effect of occupation. This is in contrast to a Dutch study on sickness absence due to depression, which reported longer absence spells for employees sick-listed from the public and the educational sector and for those absent from smaller companies.[16] In our data, employees from the educational sector also had the longest median RTW time. However,

Table 3 Fitted model for time to RTW in employees sick listed with MHP

	HR (95% CI)	*P*
Gender		
Men (ref)	–	–
Women		
Age		
19–49 (ref)	–	–
≥50		
RTW expectancy		
No (ref)	1	0.043
Yes	1.27 (1.01–1.61)	
Prior absence with MHP		
Yes (ref)	1	0.044
No	1.29 (1.01–1.64)	
Self-reported reason for absence		
Stress/burnout (ref)	1	0.027
Depression	0.76 (0.61–0.94)	
Other MHP	0.56 (0.31–1.00)	
Unspecific MHP	0.87 (0.62–1.20)	
Occupation		
Research, art and technical (ref)	–	–
Management		
Administration		
Trade		
Service		
Manual work		
Health care		

Cox proportional hazards model. A HR < 1 reflects a longer time to RTW and a HR > 1 reflects a shorter time to RTW

this result was not statistically significant, possibly due to lack of statistical power when analysing a wide range of occupational groups within a study sample of 644 participants. Unfortunately the data available from the SBA forms did not allow us to distinguish between public and private employees or large and small companies.

Strengths and weaknesses

The recruitment of participants relied on employees' attribution of MHPs as a cause of their work disability. Due to this recruitment strategy, we might not have included all relevant participants. Employees might not report MHPs because of fear of stigma or because the MHPs are undetected following Soegaard and Bech[37] who showed undetected MHPs in 22% of sick leave certificates from general practitioners in Denmark. Employees might also experience some MHPs as more stigmatizing than others. For instance, whereas we found that stress/burnout was the most frequent reason for absence, this might partially reflect that these conditions were experienced as less stigmatising than depression. Furthermore, the participants often reported several reasons for absence, which might have introduced misclassification bias. Finally, RTW was measured as receiving no social transfers, but it is possible that some participants were not working, because they found alternative income.

The prospective design of the study and the record linkage of the cohort data with sickness absence data from DREAM are two major strengths of this study. The scientific use of the DREAM register to measure sickness absence has been validated previously.[25] Moreover, despite the methodological issues related to using self-reported reasons for absence noted above, this recruitment strategy could also be considered an advantage, as it constructs a cohort similar to the population seen by social insurance officers in Denmark. Moreover, this study may have a high public health impact in Denmark, because the predictors we identified from the application forms are readily available for municipal social insurance officers. Our findings might also be useful for other rehabilitation professionals such as, general practitioners, occupational physicians and case-managers in identifying people at high risk of prolonged sickness absence. Based on our findings, rehabilitation efforts should be directed to employees with prior absence due to MHPs, with a negative RTW expectancy and employees reporting sick due to self-reported depression.

Conclusion

In conclusion, this study confirms the biospychosocial character of RTW as outlined in the ICF-model. Whereas we did not find an effect of occupation, this study demonstrated that a slower RTW was predicted by a negative RTW expectancy, prior sickness absence with MHPs, and reporting sick due to self-reported depression or other self-reported MHPs compared with self-reported stress/burnout among Danish employees sick-listed with MHPs. These predictors may help identify high-risk groups—hence, facilitate the RTW process of employees with MHPs. Because data on these predictors are readily available for social insurance officers, the knowledge gained in this study may have a high public health impact for Denmark and other countries in which social insurance officers have a major role in the RTW process.

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Conflicts of interest: None declared.

Key points

- Sickness benefit application forms offer important knowledge about predictors for RTW, which is useful for social insurance officers and other rehabilitation professionals.
- Employees sick-listed with self-reported stress/burnout, as opposed to self-reported depression or other MHPs had a shorter time to RTW. Moreover a positive RTW expectancy and no prior absence with MHPs predicted a shorter time to RTW.
- Gender, age and type of occupation were not associated with RTW.
- Almost one quarter of the participants reported prior absence with MHPs suggesting a high recurrence of sickness absence due to MHPs.

References

1 Kessler RC, McGonagle KA, Zhao SY, et al. Lifetime and 12-Month Prevalence of Dsm-Iii-R Psychiatric-Disorders in the United-States - Results from the National-Comorbidity-Survey. *Arch Gen Psychiatry* 1994;51:8–19.

2 Wittchen HU, Jacobi F. Size and burden of mental disorders in Europe–a critical review and appraisal of 27 studies. *Eur Neuropsychopharmacol* 2005;15:357–76.

3 Bültmann U, Rugulies R, Lund T, et al. Depressive symptoms and the risk of long-term sickness absence - A prospective study among 4747 employees in Denmark. *Soc Psychiatry Psychiatr Epidemiol* 2006;41:875–80.

4 Bültmann U, Christensen KB, Burr H, et al. Severe depressive symptoms as predictor of disability pension: a 10-year follow-up study in Denmark. *Eur J Public Health* 2008;18:232–4.

5 Karpansalo M, Kauhanen J, Lakka TA, et al. Depression and early retirement: prospective population based study in middle aged men. *J Epidemiol Community Health* 2005;59:70–4.

6 Laitinen-Krispijn S, Bijl RV. Mental disorders and employee sickness absence: the NEMESIS study. *Soc Psychiatry Psychiatr Epidemiol* 2000;35:71–7.

7 Brown J, Hanlon P, Turok I, et al. Mental health as a reason for claiming incapacity benefit–a comparison of national and local trends. *J Public Health* 2009;31:74–80.

8 Decision of the National Social Appeals, Denmark 2009. Førtidspension 2009.4. Available at: http://www.ast.dk/publikationer/statistikker/foertidspension/ (25 March 2010, date accessed).

9 Hensing G, Wahlstrom R. Chapter 7. Sickness absence and psychiatric disorders. *Scand J Public Health* 2004;32:152–80.

10 Hensing G, Andersson L, Brage S. Increase in sickness absence with psychiatric diagnosis in Norway: a general population-based epidemiologic study of age, gender and regional distribution. *BMC Med* 2006;4 (doi:10.1186/1741-7015-4-19).

11 World Health Organization (WHO). *International classification of functioning, disability and health (ICF),* Geneva, 2001.

12 Wasiak R, Young AE, Roessler RT, et al. Measuring return to work. *J Occup Rehabil* 2007;17:766–81.

13 Iles RA, Davidson M, Taylor NF. Psychosocial predictors of failure to return to work in non-chronic non-specific low back pain: a systematic review. *Occup Environ Med* 2008;65:507.

14 Blank L, Peters J, Pickvance S, et al. A systematic review of the factors which predict return to work for people suffering episodes of poor mental health. *J Occup Rehabil* 2008;18:27–34.

15 Nieuwenhuijsen K, Verbeek JH, de Boer AGEM, et al. Predicting the duration of sickness absence for patients with common mental disorders in occupational health care. *Scand J Work Environ Health* 2006;32:67–74.

16 Koopmans PC, Roelen CAM, Groothoff JW. Sickness absence due to depressive symptoms. *Int Arch Occup Environ Health* 2008;81:711–19.

17 Brouwers EPM, Terluin B, Tiemens BG, Verhaak PFM. Predicting return to work in employees sick-listed due to minor mental disorders. *J Occup Rehabil* 2009;19:323–32.

18 de Rijk A, Janssen N, Alexanderson K, Nijhuis F. Gender differences in return to work patterns among sickness absentees and their associations with health: a prospective cohort study in The Netherlands. *Int J Rehabil Res* 2008;31:327–36.

19 Engström L-G, Janson S. Stress-related sickness absence and return to labour market in Sweden. *Disabil Rehabil* 2007;29:411–16.

20 Shiels C, Gabbay MB, Ford FM. Patient factors associated with duration of certified sickness absence and transition to long-term incapacity. *Br J Gen Pract* 2004;54:86–91.

21 Gjesdal S, Ringdal PR, Haug K, Maeland JG. Long-term sickness absence and disability pension with psychiatric diagnoses: a population-based cohort study. *Nord J Psychiatry* 2008;62:294–301.

22 Høgelund J, Filges T, Jensen S. *Langvarigt sygefravær - hvad sker der, og hvordan går det.* København: Socialforskningsinstituttet, 2003.

23 Johansen K, Andersen JS, Mikkelsen S, et al. Controlling sickness absence: a study of changes in the Danish sickness absence legislation since 1973. *Health Policy* 2008;86:109–18.

24 Nielsen MB, Bultmann U, Amby M, et al. Return to work among employees with common mental disorders: Study design and baseline findings from a mixed-method follow-up study. *Scand J Public Health* 2010.

25 Hjollund NH, Larsen FB, Andersen JH. Register-based follow-up of social benefits and other transfer payments: Accuracy and degree of completeness in a Danish interdepartmental administrative database compared with a population-based survey. *Scand J Public Health* 2007;35:497–502.

26 Danmarks S. [Statistics Denmark]. *DISCO-88: Danmarks Statistiks fagklassifikation* [*DISCO:88:Statistics Denmarks' classification of occupations*]. 1. udg. ed. [1.ed.] Kbh.: Danmarks Statistik, 1996 [Copenhagen, 1996].

27 Dewa CS, Goering P, Lin E, Paterson M. Depression-related short-term disability in an employed population. *J Occup Environ Med* 2002;44:628–33.

28 Dekkers-Sanchez PM, Hoving JL, Sluiter JK, Frings-Dresen MHW. Factors associated with long-term sick leave in sick-listed employees: a systematic review. *Occup Environ Med* 2008;65:153–57.

29 Post M, Krol B, Groothoff JW. Self-rated health as a predictor of return to work among employees on long-term sickness absence. *Disabil Rehabil* 2006;28:289–97.

30 Heijbel B, Josephson M, Jensen I, et al. Return to work expectation predicts work in chronic musculoskeletal and behavioral health disorders: Prospective study with clinical implications. *J Occup Rehabil* 2006;16:173–84.

31 Schultz IZ, Stowell AW, Feuerstein M, Gatchel RJ. Models of return to work for musculoskeletal disorders. *J Occup Rehabil* 2007;17:327–52.

32 Fadyl J, McPherson K. Return to work after injury: a review of evidence regarding expectations and injury perceptions, and their influence on outcome. *J Occup Rehabil* 2008;18:362–74.

33 Steenstra IA, Verbeek JH, Heymans MW, Bongers PM. Prognostic factors for duration of sick leave in patients sick listed with acute low back pain: a systematic review of the literature. *Occup Environ Med* 2005;62:851–60.

34 Gjesdal S, Bratberg E. Diagnosis and duration of sickness absence as predictors for disability pension: Results from a three-year, multi-register based and prospective study. *Scand J Public Health* 2003;31:246–54.

35 Nystuen P, Hagen KB, Herrin J. Mental health problems as a cause of long-term sick leave in the Norwegian workforce. *Scand J Public Health* 2001;29:175–82.

36 Hensing G, Brage S, Nygard JF, et al. Sickness absence with psychiatric disorders - an increased risk for marginalisation among men? *Soc Psychiatry Psychiatr Epidemiol* 2000;35:335–40.

37 Sogaard HJ, Bech P. Psychometric analysis of Common Mental Disorders - Screening Questionnaire (CMD-SQ) in long-term sickness absence. *Scand J Public Health* 2009;37:855–63.